

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

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Date of mailing (day/month/year)  
29 June 2006 (29.06.2006)

Applicant's or agent's file reference  
O07F1443

**IMPORTANT NOTIFICATION**

International application No.  
PCT/JP2004/012563

International filing date (day/month/year)  
31 August 2004 (31.08.2004)

Applicant  
ONO PHARMACEUTICAL CO., LTD. et al

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

**It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.**

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Masashi Honda

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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

|  |   |  |                  |
|--|---|--|------------------|
| Applicant's or agent's file reference<br>O07F1443  | <b>FOR FURTHER ACTION</b>   |  | See item 4 below |
| International application No.<br>PCT/JP2004/012563   | International filing date (day/month/year)<br>31 August 2004 (31.08.2004) | Priority date (day/month/year)<br>01 September 2003 (01.09.2003) |                  |
| International Patent Classification (8th edition unless older edition indicated)<br>See relevant information in Form PCT/ISA/237 |   |  |                  |
| Applicant<br>ONO PHARMACEUTICAL CO., LTD.  |   |  |                  |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

|  |   |
|--|---|
| <input checked="" type="checkbox"/> Box No. I    | Basis of the report   |
| <input type="checkbox"/> Box No. II              | Priority  |
| <input checked="" type="checkbox"/> Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV              | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI              | Certain documents cited   |
| <input type="checkbox"/> Box No. VII             | Certain defects in the international application  |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis.2).

|   |   |
|---|---|
| Date of issuance of this report<br>20 June 2006 (20.06.2006)  |   |
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland<br>Facsimile No. +41 22 740 14 35 | Authorized officer<br>Masashi Honda<br>Telephone No. +41 22 338 70 10 |

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**TRANSLATION**

**PCT**

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

|   |  |   |   |
|---|--|---|---|
| Applicant's or agent's file reference<br><b>007F1443</b>                          |  | Date of mailing<br>(day/month/year)                             |   |
| International application No.<br><b>PCT/JP2004/012563</b>                         |  | International filing date (day/month/year)<br><b>31.08.2004</b> | Priority date (day/month/year)<br><b>01.09.2003</b> |
| International Patent Classification (IPC) or both national classification and IPC |  |   |   |
| Applicant<br><b>ONO PHARMACEUTICAL CO., LTD.</b>                                  |  |   |   |

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

|  |                    |
|--|--------------------|
| Name and mailing address of the ISA/JP | Authorized officer |
| Facsimile No.                          | Telephone No.      |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
 This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
 a sequence listing  
 table(s) related to the sequence listing
  - b. format of material  
 in written format  
 in computer readable form
  - c. time of filing/furnishing  
 contained in the international application as filed.  
 filed together with the international application in computer readable form.  
 furnished subsequently to this Authority for the purposes of search.
3.  In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

the entire international application  
 claims Nos. 16, 17

because:

the said international application, or the said claims Nos. 16, 17  
 relate to the following subject matter which does not require an international preliminary examination (specify):

Claims 16 and 17 relate to methods for treatment of the human body by therapy and thus relate to a subject for which this International Search Authority is not required to conduct a preliminary search under the provisions of PCT Article 17 (2)(a)(i) and PCT Rule 39.1 (iv).

the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_ are so unclear that no meaningful opinion could be formed (*specify*):

the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported by the description that no meaningful opinion could be formed.

no international search report has been established for said claims Nos. 16, 17

the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

has not been furnished  
 does not comply with the standard

the computer readable form

has not been furnished  
 does not comply with the standard

the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

See Supplemental Box for further details.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2004/012563

|  |        |  |     |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
|--|--------|--|-----|-------------|--------|----------|-----|--------|------|----|---------------------|--------|----------|-----|--------|------|----|-------------------------------|--------|----------|-----|--------|--|----|
| Box No. V  |        | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |     |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
| <p><b>1. Statement</b></p> <table> <tr> <td rowspan="2">Novelty (N)</td> <td>Claims</td> <td>3-15, 18</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td>1, 2</td> <td>NO</td> </tr> <tr> <td rowspan="2">Inventive step (IS)</td> <td>Claims</td> <td>3-15, 18</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td>1, 2</td> <td>NO</td> </tr> <tr> <td rowspan="2">Industrial applicability (IA)</td> <td>Claims</td> <td>1-15, 18</td> <td>YES</td> </tr> <tr> <td>Claims</td> <td></td> <td>NO</td> </tr> </table> <p><b>2. Citations and explanations:</b></p> <p>Document 1: TOUZEAU, F. et al, Journal of Medicinal Chemistry, 2003, Vol.46, No.10, pp.1962-1979</p> <p>Document 2: MAYER, S. et al, Heterocycles, 2001, Vol. 55, No. 10, pp.1873-1888</p> <p>Document 3: JP 11-92476 A (Adir et Companie) 06 April 1999</p> <p>Document 4: EVANS, J. M. et al, Br. J. clin. Pharmac., 1989, Vol. 28, pp.125-135</p> <p>Document 5: DENZILINGER, C. et al, Br. J. Pharmacol., 1991, Vol. 102, pp.865-870</p> <p>Document 6: O'BYRNE, P.M. et al, Annals of the New York Academy of Science, 1994, Vol. 744, pp.251-261</p> <p>Document 7: MURAKI, Masato et al, Allergy no Rinsho, 2002, Vol. 22, No. 10, pp. 759-764</p> <p><b>*Claims 1 and 2</b><br/>The inventions of claims 1 and 2 do not appear to possess novelty or involve an inventive step based on documents 1 and 2 cited in the ISR.<br/>There are no differences in invention-specific matters between the invention of this application and the inventions described in documents 1 and 2 because the compounds described in schemes 7 and 8 in document 1 and the compound described in Fig. 2 in document 2 are included in the compounds described in claims 1 and 2 of this application.</p> <p><b>*Claims 3-15 and 18</b><br/>The inventions of claims 3-15 and 18 appear to possess novelty and involve an inventive step as they are not described in any of the documents cited in the ISR.<br/>In particular, efficacy in treatment of cysLT2-mediated disease of compounds disclosed in the descriptions in the present application is neither described nor suggested.</p> |        |  |     | Novelty (N) | Claims | 3-15, 18 | YES | Claims | 1, 2 | NO | Inventive step (IS) | Claims | 3-15, 18 | YES | Claims | 1, 2 | NO | Industrial applicability (IA) | Claims | 1-15, 18 | YES | Claims |  | NO |
| Novelty (N)  | Claims | 3-15, 18   | YES |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
|  | Claims | 1, 2   | NO  |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
| Inventive step (IS)  | Claims | 3-15, 18   | YES |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
|  | Claims | 1, 2   | NO  |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
| Industrial applicability (IA)  | Claims | 1-15, 18   | YES |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |
|  | Claims |  | NO  |             |        |          |     |        |      |    |                     |        |          |     |        |      |    |                               |        |          |     |        |  |    |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. VIII      Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The inventions in claims 1-9, 11-15, and 18 include a vast plurality of compounds. However, no more than a very small portion of these compounds are supported by the description in the sense of PCT Article 6 and disclosed therein in the sense of PCT Article 5.

In addition, the wording "prodrug" in claims 1-18 renders the scope of the inventions of this application ambiguous because even if the contents of the description are investigated, which particular compounds are included or not included thereby cannot be stated as being clear.